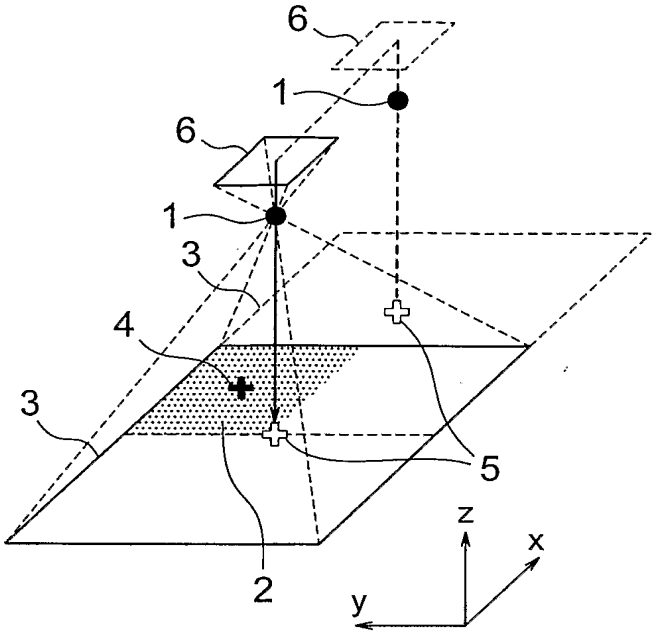


FIG. 1A

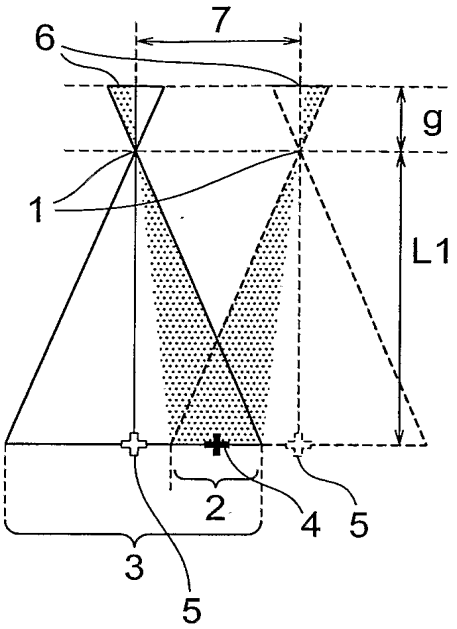


FIG. 1B

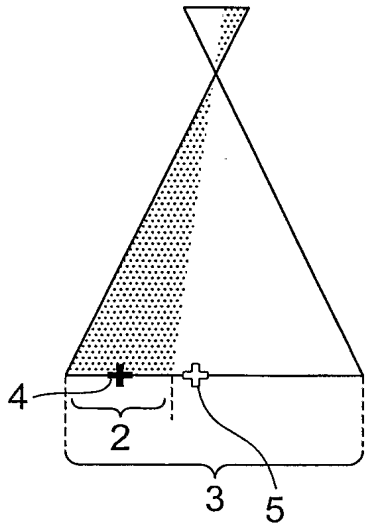


FIG. 1C

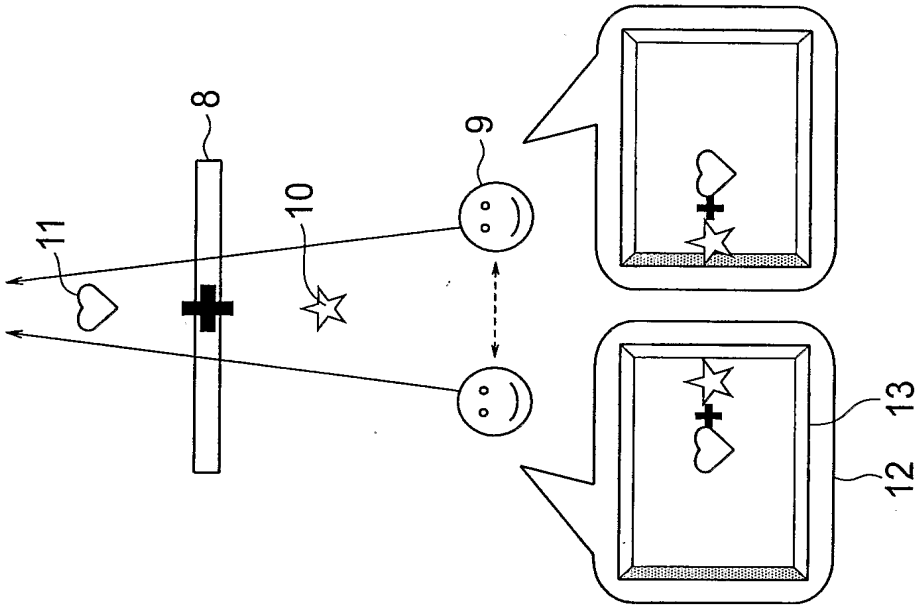


FIG. 2B

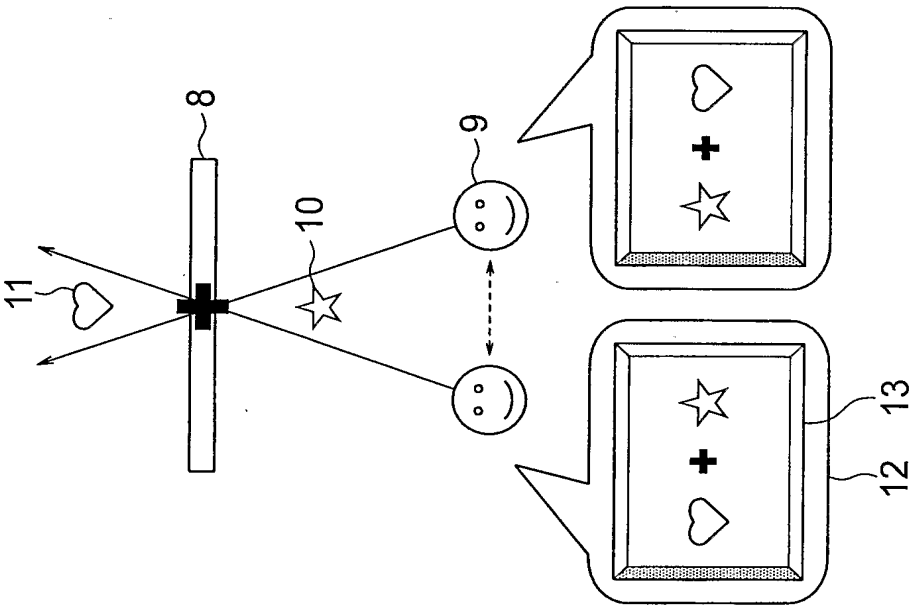


FIG. 2A

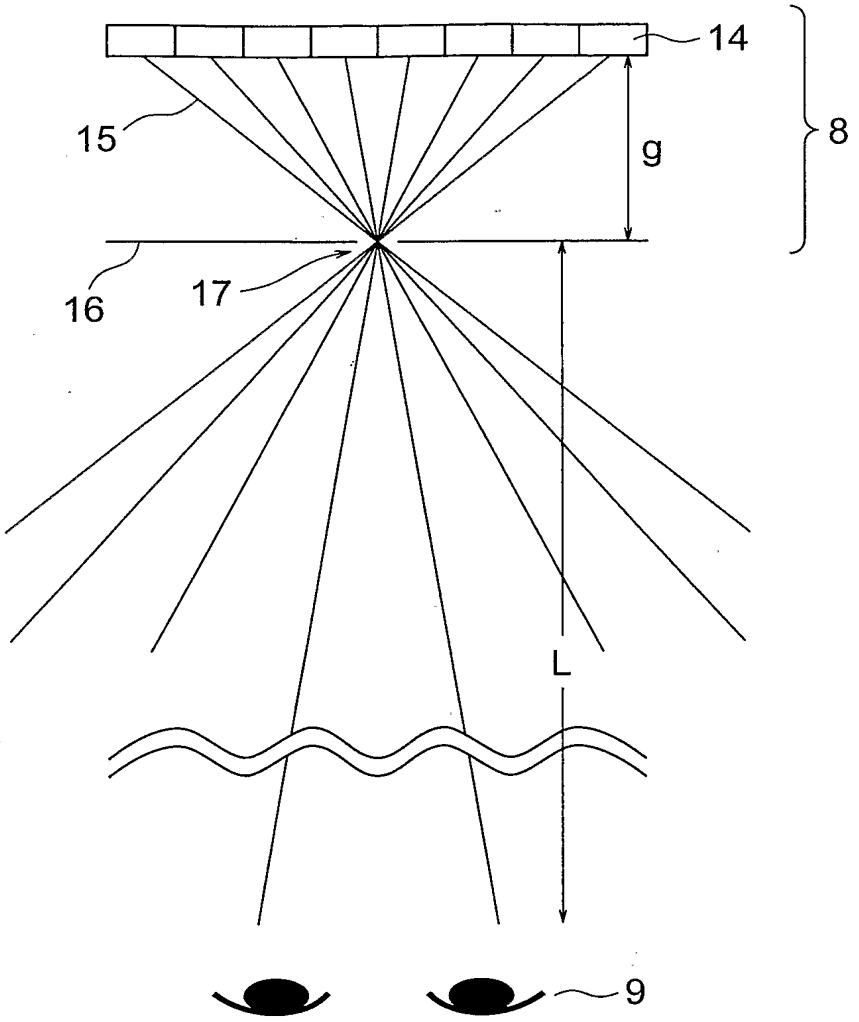


FIG. 3

[mm]		[pixel]		[mm/pixel]		REMARKS
2D DISPLAY PARAMETERS						
D_W_h	WIDTH	D_x_h	HORIZONTAL NUMBER OF PIXELS	D_p_h	HORIZONTAL PIXEL PITCH	
D_W_v	HEIGHT	D_x_v	VERTICAL NUMBER OF PIXELS	D_p_v	VERTICAL PIXEL PITCH	
3D DISPLAY PARAMETERS						
3D_W_h	WIDTH	3D_x_h	HORIZONTAL NUMBER OF PIXELS	3D_p_h	HORIZONTAL PIXEL PITCH	
3D_W_v	HEIGHT	3D_x_v	VERTICAL NUMBER OF PIXELS	3D_p_v	VERTICAL PIXEL PITCH	
REFERENCE PROJECTION PLANE PARAMETERS						
P_W_h	WIDTH	P_x_h	HORIZONTAL NUMBER OF PIXELS	P_p_h	HORIZONTAL PIXEL PITCH	REFERENCE PROJECTION PLANE
P_W_v	HEIGHT	P_x_v	VERTICAL NUMBER OF PIXELS	P_p_v	VERTICAL PIXEL PITCH	REFERENCE PROJECTION PLANE
INDIVIDUAL PROJECTION PLANE PARAMETERS						
P_ray	HORIZONTAL INTERVAL					LIGHT RAY INTERVAL AT L1
S_W_h	WIDTH	S_x_h	HORIZONTAL NUMBER OF PIXELS	Sp_p_h	HORIZONTAL PIXEL PITCH	SHOT IMAGE HORIZONTAL
S_W_v	HEIGHT	S_x_v	VERTICAL NUMBER OF PIXELS	S_p_v	VERTICAL PIXEL PITCH	SHOT IMAGE VERTICAL
Shift_W		Shift_x		Shift_p		SHIFT IN HORIZONTAL COORDINATE BETWEEN INDIVIDUAL PROJECTION PLANES
Shift_all_W		Shift_all_x		Shift_all_p		SHIFT OF INDIVIDUAL PROJECTION PLANE AT OUTERMOST END
Overlap_W		Overlap_x		Overlap_p		OVERLAPPING HORIZONTAL WIDTH BETWEEN INDIVIDUAL PROJECTION PLANES

FIG. 4

ENLARGEMENT AND REDUCTION OF MULTI-VIEWPOINT IMAGE				
Zoom_S		zoom_N		ZOOM (MAGNIFICATION)

FIG. 5

[mm]		[pixel]		[mm/pixel]	
2D DISPLAY PARAMETERS					
D_W_h	=D_p_h * D_x_h	D_x_h	=DEFAULT	D_p_h	=DEFAULT
D_W_v	=D_p_v * D_x_v	D_x_v	=DEFAULT	D_p_v	=DEFAULT
3D DISPLAY PARAMETERS					
3D_W_h	=D_W_h	3D_x_h	=D_x_h * 3/Np	3D_p_h	=3D_W_h/3D_x_h
3D_W_v	=D_W_v	3D_x_v	=DEFAULT	3D_p_v	=3D_W_v/3D_x_v
ENLARGEMENT AND REDUCTION OF MULTI-VIEWPOINT IMAGE					
zoom_S	=DEFAULT	zoom_N	=DEFAULT		
REFERENCE PROJECTION PLANE PARAMETERS					
P_W_h	=D_W_h * zoom_S	P_x_h	=3D_x_h * zoom_N	P_p_h	=P_W_h/P_x_h
P_W_v	=D_W_v * zoom_S	P_x_v	=3D_x_v * zoom_N	P_p_v	=P_W_v/P_x_v
INDIVIDUAL PROJECTION PLANE PARAMETERS					
P_ray	=(D_p_h/3) * L1/g				
S_W_h	=Sp_p_h * S_x_h	S_x_h	=Shift_all_x+ Overlap_x	Sp_p_h	=P_p_v
S_W_v	=S_p_v * S_x_v	S_x_v	=ROUND(2 * (L1/ TAN(ϕ)+P_W_v/2) /P_p_v)	S_p_v	=P_p_v
Shift_W	=Shift_p * Shift_x	Shift_x	=ROUND(P_ray_/ P_p_v)	Shift_p	=P_p_v
Shift_all _W	=Shift_all_p * Shift _all_x	Shift_all _x	=Shift_x * (N_need −1)	Shift_all _p	=P_p_v
Overlap_ W	=Overlap_p * Overlap_x	Overlap_ x	=P_x_h * P_p_h/ P_p_v	Overlap_p	=P_p_v

FIG. 6

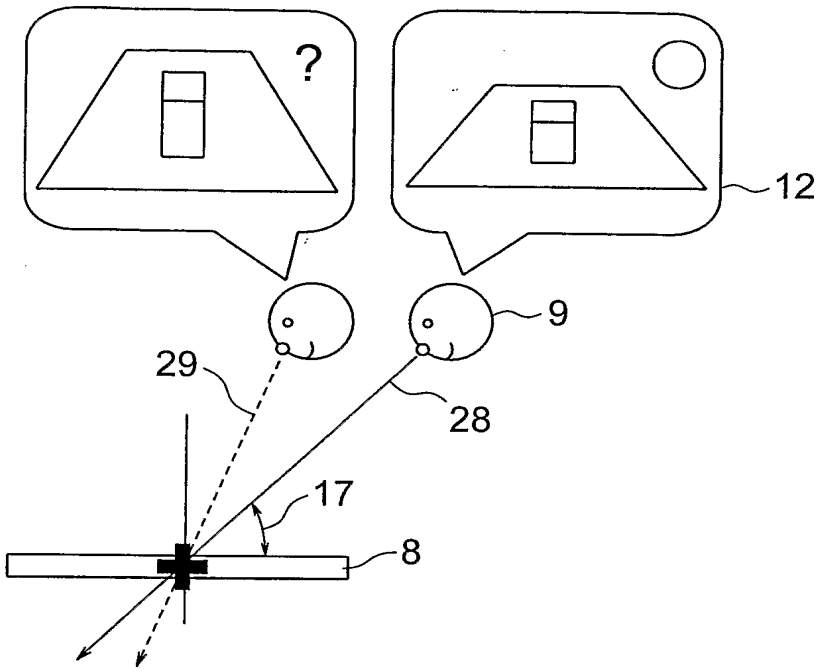


FIG. 7

ϕ [degree]	45	50	55	60	65
b/a	1	0.84	0.70	0.58	0.47

FIG. 8

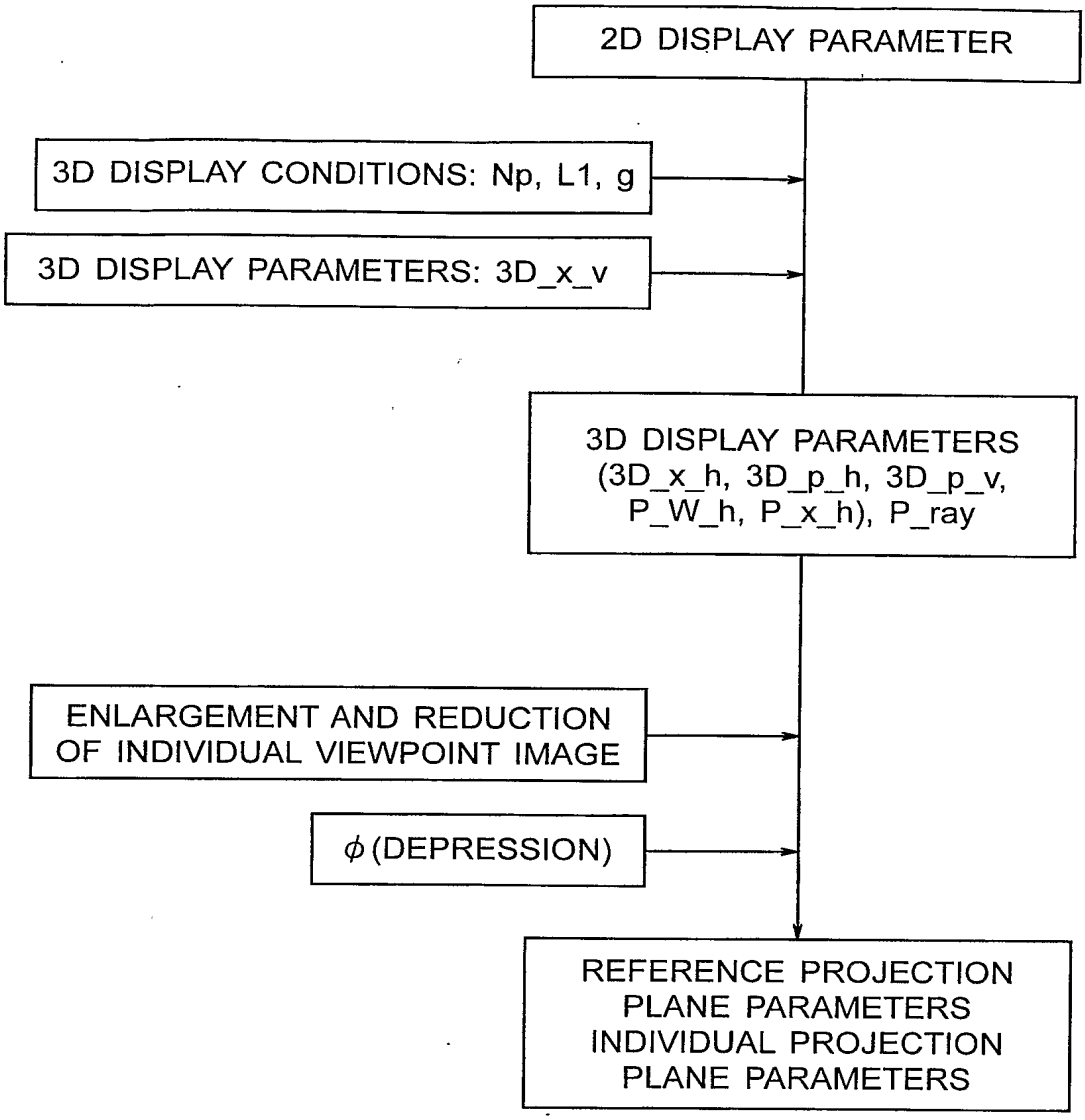

2D DISPLAY PARAMETER
3D DISPLAY CONDITIONS: Np, L1, g
3D DISPLAY PARAMETERS: 3D_x_v
3D DISPLAY PARAMETERS (3D_x_h, 3D_p_h, 3D_p_v, P_W_h, P_x_h), P_ray
ENLARGEMENT AND REDUCTION OF INDIVIDUAL VIEWPOINT IMAGE
φ (DEPRESSION)
REFERENCE PROJECTION PLANE PARAMETERS INDIVIDUAL PROJECTION PLANE PARAMETERS

FIG. 9

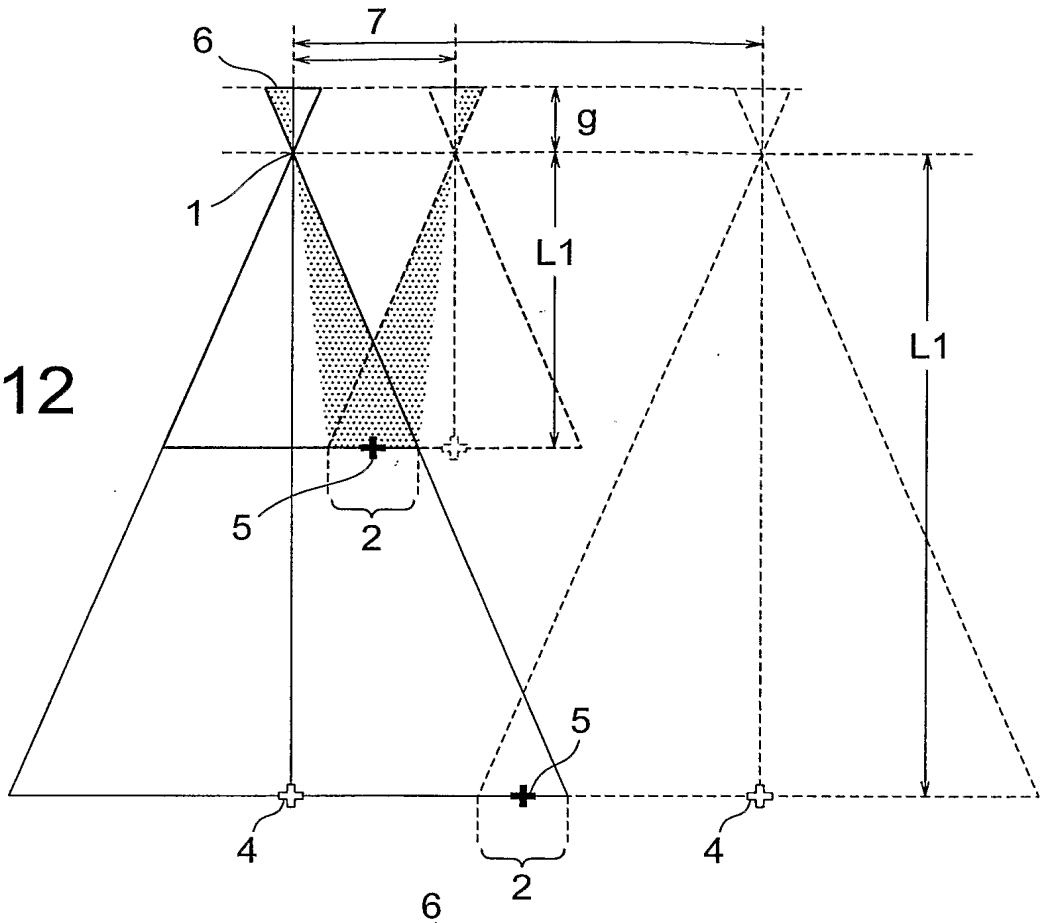
	[mm]		[pixel]		[mm/pixel]	REMARKS
CAMERA PARAMETERS						
F_W_h	WIDTH	F_x_h	HORIZONTAL NUMBER OF PIXELS	F_p_h	HORIZONTAL PIXEL PITCH	FILM HORIZONTAL
F_W_v	HEIGHT	F_x_v	VERTICAL NUMBER OF PIXELS	F_p_v	VERTICAL PIXEL PITCH	FILM VERTICAL
F	FOCAL LENGTH					DISTANCE BETWEEN FILM AND LENS

FIG. 10

	[mm]		[pixel]		[mm/pixel]
ENLARGEMENT AND REDUCTION OF MULTI-VIEWPOINT IMAGE					
zoom_S	=DEFAULT	zoom_N	=P_x_v/3D_x_v		
REFERENCE PROJECTION PLANE PARAMETERS					
P_W_h	=P_p_h * P_x_h	P_x_h	=ROUND(P_x_v * 3D_W_h/3D_W_v)	P_p_h	=F_p_h * L1/f
P_W_v	=3D_W_h * Zoom_S	P_x_v	=ROUND(P_W_v/P_p_v)	P_p_v	=F_p_v * L1/f
INDIVIDUAL PROJECTION PLANE PARAMETERS					
P_ray	=(FD_p_h/3) * L2/g				
S_W_h	=Sp_p_h * S_x_h	S_x_h	=F_x_h	Sp_p_h	=P_p_v
S_W_v	=Fp_p_h * F_x_h	S_x_v	=F_x_v	S_p_v	=P_p_v
Shift_W	=Shift_p * Shift_x	Shift_x	=ROUND(P_W_h/P_p_v)	Shift_p	=P_p_v
Shift_all_W	=Shift_all_p * Shift_all_x	Shift_all_x	=Shift_x * (N_all_result−1)	Shift_all_p	=P_p_v
Overlap_W	=Overlap_p * Overlap_x	Overlap_x	=S_x_h−Shift_all_x	Overlap_p	=P_p_v
CAMERA PARAMETERS					
F_W_h	=F_W_v * F_x_h/F_x_v	F_x_h	=DEFAULT	F_p_h	=F_W_h/F_x_h
F_W_v	=DEFAULT	F_x_v	=DEFAULT	F_p_v	=F_W_v/F_x_v
F	=DEFAULT				

FIG. 11

FIG. 12



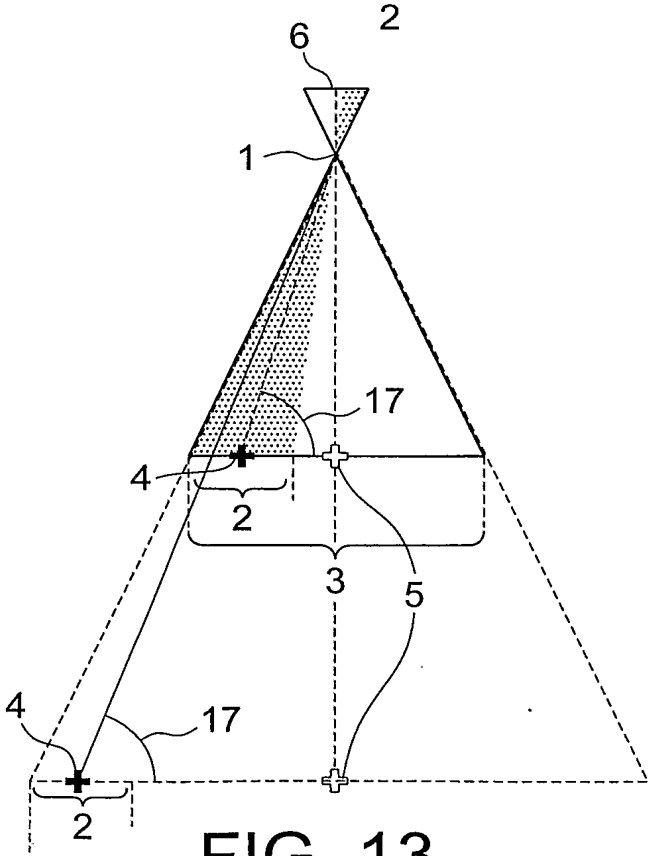


FIG. 13

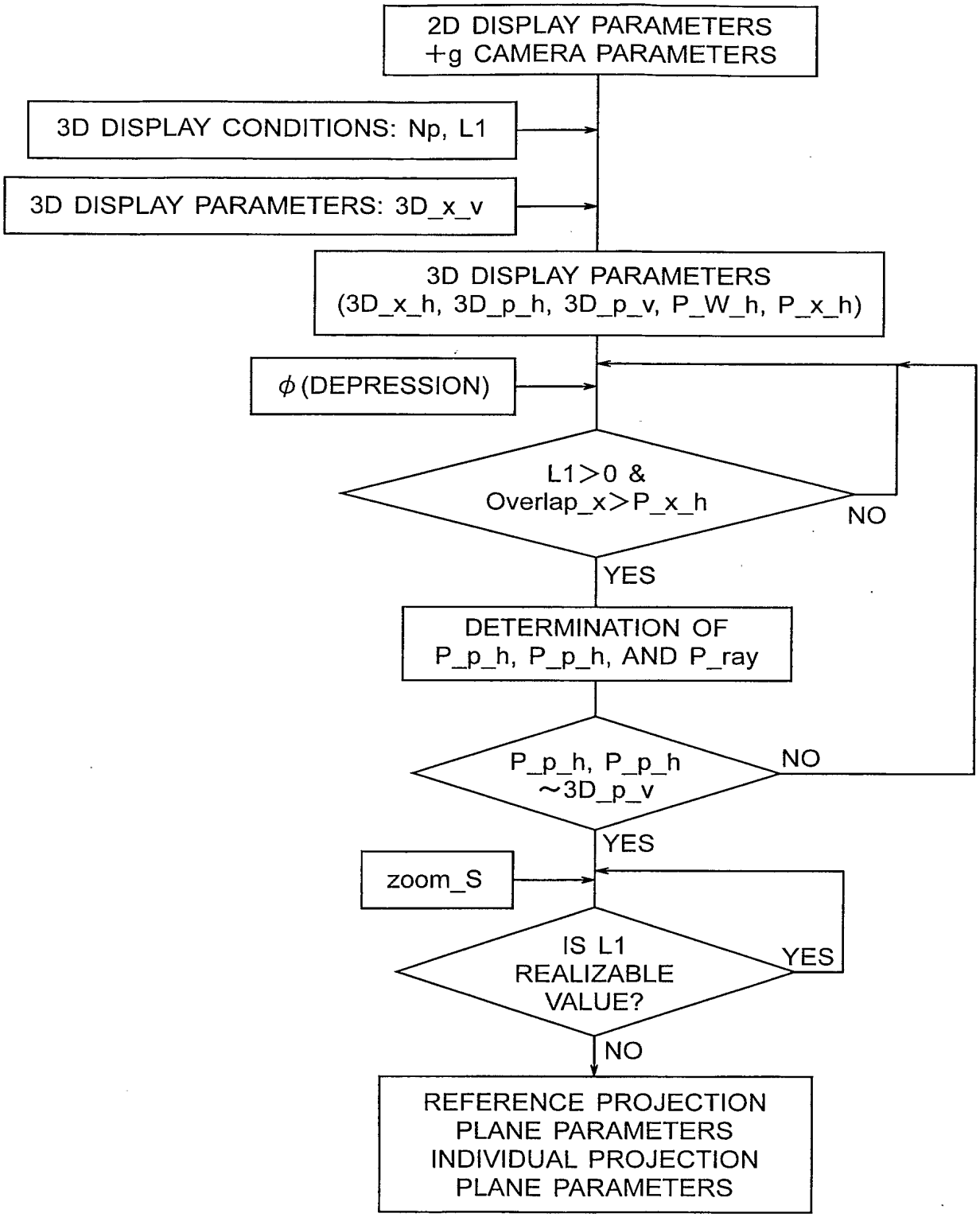

2D DISPLAY PARAMETERS
+g CAMERA PARAMETERS
3D DISPLAY CONDITIONS: Np, L1
3D DISPLAY PARAMETERS: 3D_x_v
3D DISPLAY PARAMETERS
(3D_x_h, 3D_p_h, 3D_p_v, P_W_h, P_x_h)
φ (DEPRESSION)
L1>0 &
Overlap_x>P_x_h
NO
YES
DETERMINATION OF
P_p_h, P_p_h, AND P_ray
P_p_h, P_p_h
~3D_p_v
NO
YES
zoom_S
IS L1
REALIZABLE
VALUE?
YES
NO
REFERENCE PROJECTION
PLANE PARAMETERS
INDIVIDUAL PROJECTION
PLANE PARAMETERS

FIG. 14

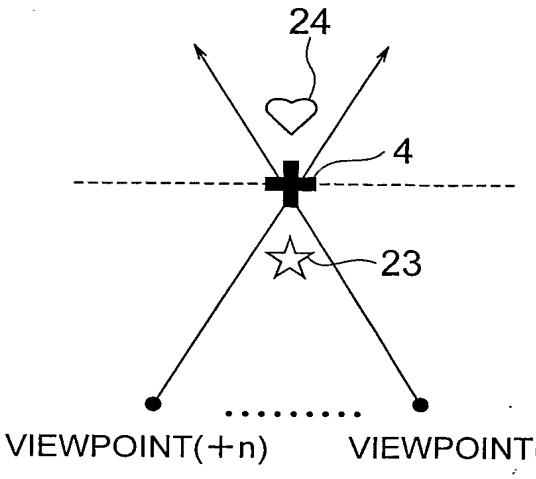


FIG. 15A

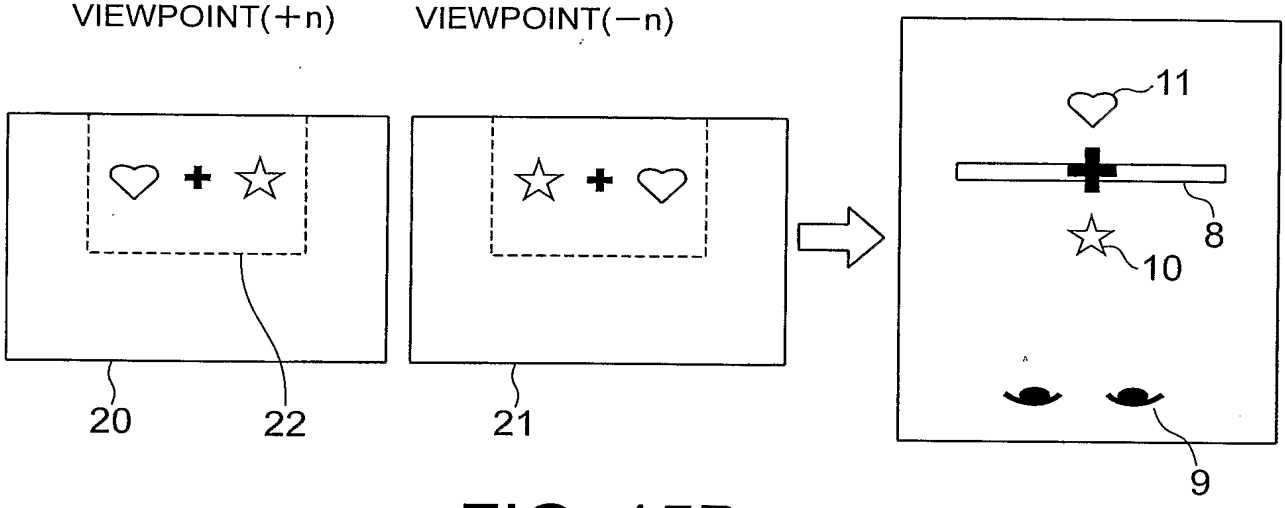


FIG. 15B

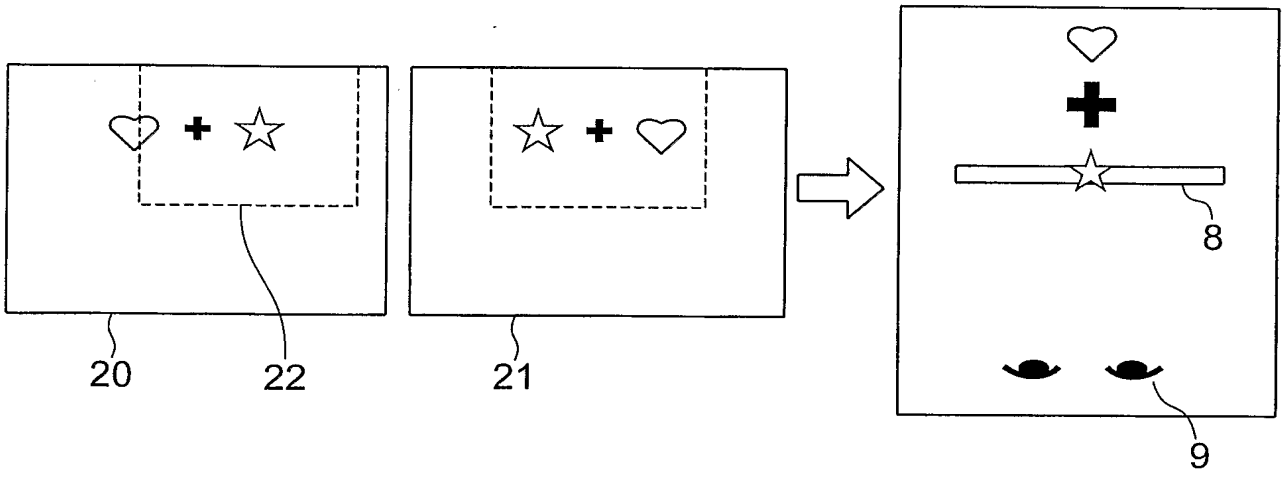


FIG. 15C

	[mm]		[pixel]		[mm/pixel]
2D DISPLAY PARAMETERS					
D_W_h	331.2	D_x_h	1920	D_p_h	0.1725
D_W_v	207	D_x_v	1200	D_p_v	0.1725
3D DISPLAY PARAMETERS					
3D_W_h	331.2	3D_x_h	320	3D_p_h	1.035
3D_W_v	207	3D_x_v	400	3D_p_v	0.5175
ENLARGEMENT AND REDUCTION OF INDIVIDUAL VIEWPOINT IMAGE					
zoom_S	1	zoom_N	1		
REFERENCE PROJECTION PLANE PARAMETERS					
P_W_h	331.2	P_x_h	320	P_p_h	1.035
P_W_v	207	P_x_v	400	P_p_v	0.5175
INDIVIDUAL PROJECTION PLANE PARAMETERS					
P_ray	20.125				
S_W_h	1037.5875	S_x_h	2005	Sp_p_h	0.5175
S_W_v	1187.145	S_x_v	2294	S_p_v	0.5175
Shift_W	20.1825	Shift_x	39	Shift_p	0.5175
Shift_all_W	706.3875	Shift_all_x	1365	Shift_all_p	0.5175
Overlap_W	331.2	Overlap_x	640	Overlap_p	0.5175

FIG. 16

	[mm]		[pixel]		[mm/pixel]
2D DISPLAY PARAMETERS					
D_W_h	331.2	D_x_h	1920	D_p_h	0.1725
D_W_v	207	D_x_v	1200	D_p_v	0.1725
3D DISPLAY PARAMETERS					
3D_W_h	331.2	3D_x_h	320	3D_p_h	1.0327577
3D_W_v	207	3D_x_v	400	3D_p_v	0.5175
ENLARGEMENT AND REDUCTION OF INDIVIDUAL VIEWPOINT IMAGE					
zoom_S	1	zoom_N	1.265		
REFERENCE PROJECTION PLANE PARAMETERS					
P_W_h	331.619712	P_x_h	810	P_p_h	0.4094071
P_W_v	207	P_x_v	506	P_p_v	0.4094071
INDIVIDUAL PROJECTION PLANE PARAMETERS					
P_ray	26.4835187				
S_W_h	818.814104	S_x_h	2000	Sp_p_h	0.4094071
S_W_v	1228.22116	S_x_v	3000	S_p_v	0.4094071
Shift_W	26.6114584	Shift_x	65	Shift_p	0.4094071
Shift_all _W	452.394792	Shift_all _x	1105	Shift_all _p	0.4094071
Overlap_ W	366.419311	Overlap_ x	895	Overlap_p	0.4094071
CAMERA PARAMETERS					
F_W_h	16	F_x_h	2000	F_p_h	0.008
F_W_v	24	F_x_v	3000	F_p_v	0.008
F	18				

FIG. 17

	[mm]		[pixel]		[mm/pixel]
2D DISPLAY PARAMETERS					
D_W_h	331.2	D_x_h	1920	D_p_h	0.1725
D_W_v	207	D_x_v	1200	D_p_v	0.1725
3D DISPLAY PARAMETERS					
3D_W_h	331.2	3D_x_h	320	3D_p_h	1.035
3D_W_v	207	3D_x_v	400	3D_p_v	0.5175
P_W_h	1.03795714	P_x_h	18.0514286		
ENLARGEMENT AND REDUCTION OF INDIVIDUAL VIEWPOINT IMAGE					
zoom_S	1	zoom_N	1.015		
REFERENCE PROJECTION PLANE PARAMETERS					
P_W_h	331.023652	P_x_h	650	P_p_h	0.5092672
P_W_v	207	P_x_v	406	P_p_v	0.5092672
INDIVIDUAL PROJECTION PLANE PARAMETERS					
P_ray	32.9432192				
S_W_h	1527.80147	S_x_h	3000	Sp_p_h	0.5092672
S_W_v	1018.53431	S_x_v	2000	S_p_v	0.5092672
Shift_W	33.1023652	Shift_x	65	Shift_p	0.5092672
Shift_all _W	1158.58278	Shift_all _x	2275	Shift_all _p	0.5092672
Overlap_ W	369.218689	Overlap_ x	725	Overlap_p	0.5092672
CAMERA PARAMETERS					
F_W_h	24	F_x_h	3000	F_p_h	0.008
F_W_v	16	F_x_v	2000	F_p_v	0.008
F	18				

FIG. 18